

NUTRITION SCIENCE CAREERS I&II

Nutrition Science Careers I&II builds on content and skills of Nutrition Science Careers I and prepares students for careers in and higher education programs related to nutrition, dietetics, food science, food research and development, and related careers that focus on assisting individuals and families in managing their personal, family, and social needs regarding nutrition, diet, and foods. The course of study includes, but is not limited to: advanced topics and issues in nutrition; advanced food science topics and issues; food and nutrition for individuals and families with special needs and disadvantaging conditions; topics related to management of daily living needs of individuals and families; nutrition and foods in child care and convalescent care; topics and issues related to maintaining the food supply; topics related to cleaning and maintenance, purchasing, and food preparation; managing operations in food production, food science, or food research and development establishments; providing for the dietary needs of persons with special requirements; related research, development, and testing. Ethical, legal, and safety issues as well as helping processes and collaborative ways of working with others are to be addressed. Intensive laboratory experiences with industry applications are a required component of this course of study. Work-based experiences in food and nutrition science careers are strongly encouraged. This course provides the foundation for study in higher education that leads to related careers.

- DOE Code:5457
- Recommended Grade Levels: 11-12
- Recommended Prerequisites: Nutrition Science Careers I
- Credits: 1-3 credit(s) per semester, 6 credits maximum
- Counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and
- Core 40 with Technical Honors diplomas

Application of Content

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in FCCLA and/or FFA, the CTSOs for the most closely related subject matter areas.

Content Standards

Domain I – Principles of Food Preparation

Core Standard 1

Understand the chemical and physical properties of food, including meat, egg, poultry, fish, milk dairy, vegetables, fruit, flour, fats and oils, engineered and functional foods

Standards

- 1.1 Have a basic understanding of the chemical and physical properties of foods and how that relates to it being metabolized
- 1.2 Students should understand the basic chemical composition of foods, including starches, fats, alcohols, basic carbohydrates, proteins, etc.

Core Standard 2

Compare the wide variety of food preparations including an analysis of the different techniques, ingredients, and the nutrient availability of the foods

Standards

- 2.1 Understand the basic functions of certain ingredients including sweeteners, preservatives, yeasts, flours, coloring, salts, acids and bases, food additives, etc.
- 2.2. Compare different techniques and methods of food preparation on taste, bioavailability, nutrient density, and different dietary factors to consider
- 2.3 Consider how different food preparation and combinations of ingredients affect food quality and nutrient retention

Domain II - Nutrition Composition of Food

Core Standard 3

Students should know the macro- and micro- nutrients sources including fats, proteins, carbohydrates, alcohols, vitamins and minerals

Standards

- 3.1 Include the basic dietary needs for macro and micro nutrients and the function of each nutrient

Core Standard 4

Compare and contrast the wide variety of nutrition databases

Standards

- 4.1 Survey a variety of calorie counters and food guides and pyramids, and food indexes. Including but not limited to: World Health Organization, USDA, FDA, ChooseMyPlate, MyPlate Food Guide

Domain III - Principles of Normal Nutrition

Core Standard 5

Understand the function of nutrients, phytochemicals, and antioxidants in the human diet and compare the differences

Standards

- 5.1 Review basic physiological functions affected by nutrients, phytochemicals, and antioxidants and the consequence of deficiencies

Core Standard 6

Review basic human physiology including the connectedness of body systems and the effect of diet and nutrition on each

Standards

- 6.1 Include basic functions for life such as ingestion, digestion, absorption, metabolism, excretion, etc.
- 6.2 Review the variety of enzymes and chemicals that aid in basic life functions
- 6.3 Understand what nutrients and types of foods are necessary to maintain normal functioning
- 6.4 Analyze the nutrient/calorie needs at various stages of life: Infancy, childhood, adolescence, adulthood, pregnancy/lactation, geriatric

Domain IV - Nutrition screening and assessment

Core Standard 7

Perform a nutrition screening and understand the significance and importance of nutrition screening.

Standards

- 7.1 Analyze the purpose, appropriateness, and types of nutrition screening
- 7.2 Review the variety of risk factors, values and limitations of nutrition screening
- 7.3 Evaluate the methodology of various screenings and practice the documentation that goes along with the evaluation

Core Standard 8

Perform a nutrition assessment of individuals and understand the significance and importance of nutrition assessment

Standards

- 8.1 Students need to understand the significance of anthropometric data, biochemical, clinical, dietary intake, economic/social factors

8.2 Students should be able to collect data relating to anthropometric data, biochemical, clinical, dietary intake, and economic/social factors from peers

Core Standard 9

Review nutrition assessments of populations and understand what significance this assessment has on policy, law, health care, insurance, public programs, etc.

Standards

9.1 Student should identify nutrition status indicators, demographic data, nutritional screening surveillance systems, community health resources data, public health programs and practices

Domain V - Nutrition Diagnosis

Core Standard 10

Compare and contrast the relationship between nutrition diagnoses and medical diagnosis

Standards

10.1 Understand the implications of a nutrition diagnosis and how that relates to a medical diagnosis

10.2 Recognize the steps involved in performing a nutrition and medical diagnosis as well as the professionals that would perform each

Core Standard 11

Identify data sources and tools for nutrition diagnosis of common conditions

Standards

11.1 Identify the etiologies for nutrition diagnosis of common conditions: cause and risk factors; signs and symptoms

Domain VI - Nutrition Interventions (Planning and Intervention)

Core Standard 12

Define a spectrum of nutritional interventions for individuals with a diverse needs development

Standards

12.1 Identify nutrition care for health promotion and disease prevention

12.2 Define the nutrient needs for various life stages

12.3 Guide and create menu planning for health promotion

Core Standard 13

Understand the role of Medical Nutrition Therapy for treating medical conditions

Standards

13.1 Survey of conditions and treatment should include but not limited to cardiovascular, critical care, metabolic disorders, gastrointestinal, malnutrition, oncologic, renal, respiratory, wounds, etc.

13.2 Determine specific energy/nutrient needs and specific feeding needs for treatment of conditions

Core Standard 14

Student should be able to implement a personalized care plan

Standards

14.1 Develop personalized care plans for patient health

14.2 Provide provisions in the care plan to accommodate communication and counseling, discharge, and continuity of care

Core Standard 15

Students will outline interventions for populations

Standards

15.1 Analyze dietary guidelines (RDI/RDA) from various organizations

15.2 Review community nutrition programs

15.3 Identify local initiatives as defined by the course instructor

Domain VII - Nutrition Monitoring and Evaluation

Core Standard 16

Perform progress monitoring and continued measurement of outcome indicators

Standards

- 16.1 Define outcome indicators and levels of success
- 16.2 Practice measuring indicators and evaluating success
- 16.3 Practice communicating with a registered dietician and determine continuation of care

Domain VIII - Principles, Education, and Training

Core Standard 17

Perform program/individual assessments and develop the appropriate nutritional education planning based on the results

Standards

- 17.1 Define the components of the educational plan, including target setting, goals/objectives, needs assessment, content, evaluation criteria, budget, educational readiness assessments

Core Standard 18

Implement and evaluate a nutrition education plan

Standards

- 18.1 Implementation includes communication (interpersonal and group), methods of instructions, evaluation of educational outcomes, formative and summative assessments, and documentation

Domain IX - Menu Planning

Core Standard 19

Identify the types of menus and their appropriateness for a variety of situation

Standards

- 19.1 Analyze Nonselective/selective, cycle/static, retail, restaurant, room service and menu development

Core Standard 20

Define the factors that will dictate the development of the menu

Standards

- 20.1 Review factors including menu guidelines, client preference and condition, operational/organization influences, external influences (location, demographic, etc), modifications (allergy, food sensitivities, texture, nutrients, cultural)

Domain X - Procurement and Materials Management

Core Standard 21

Develop specifications for procuring materials and supplies as well as the management and maintenance

Standards

- 21.1 Provide protocols for the purchase of food/supplies, product and packaging, vendor selections (bids and contracts)

Core Standard 22

Design policies and procedures for purchasing, receipts, storage, and distribution of food and supplies

Standards

- 22.1 Review policies for inventory management, ordering food, purchasing systems

Domain XI - Food Production, Distribution, Service, and Facility Design

Core Standard 23

Consider aspects of food production in a variety of establishments

Standards

- 23.1 Develop procedures for food production
- 23.2 Create recipes and cooking methods
- 23.3 Craft interventions for ingredient control and portion control

Core Standard 24

Practice forecasting food demand for a variety of production systems (conventional, commissary, ready prepared, assembly, cook chill, display)

Standards

- 24.1 Understand the practices and principles of distribution and service

Domain XII – Sanitation, Safety, and Sustainability**Core Standard 25**

Develop and evaluate employee safety and sanitation programs and practices

Standards

- 25.1 Research sanitation principles, practices, and regulation and design sanitation programs and food quality and safety
- 25.2 Evaluate various equipment needs for the variety of food service establishments and create a plan for the organization of the establishment

Core Standard 26

Students consider issues of sustainability

Standards

- 26.1 Review protocols and programs for sustainability with regards to food, water, non-food, and waste management
- 26.2 Identify the pros and cons of sustainability with regards to food, water, non-food, and waste management

Domain XIII - Human Resources**Core Standard 27**

Understand basic concepts relating to human resources and business management including organizational relationships and charts, job descriptions and positions

Standards

- 27.1 Practice concepts and procedures for staff recruitment/retention
- 27.2 Review significant labor laws and understand the role and relationship with unions
- 27.3 Develop scheduling skills and programs to increase productivity
- 27.4 Create performance standards and programs to increase diversity and understand the significance of a diverse workforce

Domain XIV - Finance and Marketing**Core Standard 28**

Understand budget development and components and be able to balance a budget

Standards

- 28.1 Perform financial analysis, cost controls, and materials management

Core Standard 29

Understand the significance of marketing and create a marketing plan including techniques, implementation plan, and evaluation

Standards

- 29.1 Review marketing strategies for example product placement, promotions, prices, etc.

Domain XV - Principles of Management and Quality**Core Standard 30**

Recognize the variety of management approaches and the skills, traits, and roles each play in a place of employment

Standards

- 30.1 Create business plans including short and long range, strategic, policies procedures, disasters
- 30.2 Organize structure, priorities, tasks, resource allocation
- 30.3 Develop professional standards of practice including legislation, ethical practice, roles of dietetic personnel

Core Standard 31

Recognize the purpose and integration into different systems for regulatory guidelines (federal or accrediting agency)

Standards

- 31.1 Implement or design plans for standards, data collection, and corrective actions
- 31.2 Evaluate the effectiveness of these plans and perform research (identifying problems, data collection, reporting) and develop reports